

**SUPERFUND FACT SHEET
EPA REGION 4
ATLANTA, GEORGIA**



PROPOSED PLAN

**PEAK OIL/BAY DRUMS SUPERFUND SITE
Area-Wide Groundwater Contamination (Operable Unit 2)**

Tampa, Hillsborough County, Florida

September 2004

This Fact Sheet is not considered as a technical document, but has been prepared for the general public to provide a better understanding of the proposed activities at the Peak Oil/Bay Drums Site. Words appearing in bold print are defined in a glossary at the end of this publication.

INTRODUCTION

The U.S. Environmental Protection Agency (EPA) is issuing this Proposed Plan Fact Sheet for the Peak Oil/Bay Drums Site for several purposes:

- to provide a brief history of the Site;
- to explain proposed changes to the 1993 remedy previously selected for groundwater;
- to provide the public with an opportunity to comment on the proposed changes.

EPA, in consultation with the Florida Department of Environmental Protection (FDEP), will amend the 1993 groundwater remedy only after public comments have been considered.

EPA issues this Proposed Plan Fact Sheet as part of public participation requirements under Section 117(a) of the **Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or "Superfund")**. The Proposed Plan Fact Sheet summarizes information that can be found in greater detail in the 1993 Remedial Investigation/Feasibility Study (RI/FS), the 2003 Off-Site Surficial Groundwater Investigation, the 2004 Focused Feasibility Study and other documents contained in the **Administrative Record**. The Record and an **information repository** for the Peak Oil/Bay Drums Site can be found at the following local library:

Brandon Regional Library
619 Vonderburg Drive
Brandon, Florida

Public Meeting

If anyone wishes to request a Public Meeting on the Proposed Plan, please contact Wesley S. Hardegree by **Wednesday, October 6, 2004**
(Contact information is available on page 17 of the Fact Sheet)

Public Comment Period: September 22, 2004 - October 22, 2004
(See Page 18 for more information on Community Involvement)

SITE LOCATION (AND SCOPE OF FACT SHEET)

The Peak Oil/Bay Drums Superfund Site (“the Site”) is approximately 19 acres in size and located in north central Hillsborough County, Florida. Specifically, the Site is located on State Road 574 (SR 574), approximately 0.25 miles west of Faulkenburg Road.

The Peak Oil/Bay Drums Site is actually a composite of two adjacent separate Sites which have been combined for purposes of investigation/cleanup (see Figure 1). The Peak Oil Site covers approximately 4 acres, while the Bay Drums Site covers approximately 14.8 acres. An abandoned CSX Railroad spur runs south between the Peak Oil and Bay Drums facilities. This spur once serviced the Tampa Bay Sunshine Skyway Bridge painting site.

The Site is flanked on the east by the Reeves Southeastern Wire Facility. Industrial Galvanizing is located to the north. Just south of the Site are Peoples Gas Company’s natural gas distribution center and a soil and construction debris pile referred to as the Off-Site Shingle Pile. The Off-Site Shingle Pile was moved by EPA to its present location from the Bay Drums Site during an EPA removal action in 1989. The Consolidated Bag Company is located southwest of the Off-Site Shingle Pile. Owned by Hillsborough County, the area south of the Bay Drums Facility is undeveloped and includes a portion of the Central Wetland. South of the Central Wetland is an area which was historically used as a sprayfield for the Hillsborough County Wastewater Treatment Plant. A prison is now present south of the Central Wetland.

There are four **Operable Units** (OUs) identified at the Peak Oil/Bay Drums Site:

- OU-1 (Peak Oil Source Control)
- OU-2 (Area-Wide Groundwater)
- OU-3 (Bay Drums Source Control)
- OU-4 (Wetlands)

This Fact Sheet’s main focus is on the proposed changes to the remedy selected for OU-2 (Area-Wide Groundwater); however, OU-1, OU-3 and OU-4 will be briefly discussed in the Remedial History section for background purposes.

HISTORY OF PEAK OIL SITE

The Peak Oil Facility was constructed and began operation as a waste oil re-refinery in August 1954, under the ownership of Mr. John Schroter. Ownership of the company was transferred in 1975 to Mr. Robert Morris. Mr. Morris and his sons continued the operation of the business as a waste oil re-refinery. After 1979, operations reportedly were limited to the resale of used oils as fuel and flotation oil and repackaging of virgin material. Hillsborough County is listed as the current owner of the Site.

Facility operations involved the use of a waste re-refining process to purify waste oils and lubrications fluids. Waste oils accepted at the facility for re-refining consisted primarily of used auto and truck crankcase oil, with some hydraulic oil, transformer oil and other waste oils.

An acid/clay purification and filtration process was used to re-refine the oil. This process generated a low pH sludge and oil-saturated clay, which were stored over the life of the facility in three separate impoundment areas (Lagoons No. 1, No. 2, and No. 3). Two impoundments, Lagoons No. 2 and 3, were connected by an oil/water separator.

In 1979 or 1980, the company discontinued

the re-refining process and shifted to filtering and blending the waste oil for resale as burner fuel or flotation oil. Several company employees reported that spills and leaks continued to occur from on-site storage tanks, tanker trucks, oil/water separators, and other onsite equipment after the company shifted its operations from re-refining to filtering and blending. The former employees also reported that some wastes continued to be stored in the on-site lagoons after the shift to filtering and blending operations.

Lagoons No. 1 and 3 were backfilled. However, the exact dates of the backfilling are unknown. Lagoon No. 2 is the only impoundment on the Site that was not backfilled at that time. This lagoon originally contained up to 12 feet of sludge. Overflow from Lagoon No. 2 was apparently directed to the oil/water separator to remove free oil, and the aqueous phase was discharged into Lagoon No. 3, to the east. As explained later, all of these lagoons have been closed and no longer exist.

HISTORY OF BAY DRUMS SITE

Prior to development of the Bay Drums property in 1962, the property was an open field with some small trees. A one-acre wetland on the east side of the Site drained to the Central Wetland, which is located about 300 feet to the southwest.

The Bay Drums Facility was historically operated as a drum reconditioning facility. Like Peak Oil, Bay Drums is no longer operating. During operation, drum reconditioning activities occurred within the building on the eastern portion of the Site. Although nearly the entire property has been used for drum storage, only approximately two acres in the northeast corner of the Site were considered an active drum reclaiming area.

A berm was constructed between 1962 and 1965 that crossed the southern one-third of the one-acre wetland. This effectively dried out the southern portion of this wetland. The southern portion of this wetland was reported to be hydraulically connected to the Peak Oil Site by means of a culvert beneath the CSX Railroad spur, allowing water to drain from the Peak Oil Site to the northern portion of the wetland. The northeast and south portions of the Bay Drums Site were purchased by Mr. Bennie Genuardi, the owner of the Bay Drums facility, from the Schroters and the Atlantic Coastline Railroad in 1967 and 1968, respectively. Mark S. King is listed as the current land owner for the Bay Drums Site.

The volume of drums reconditioned at the Site increased from 1974 to 1978 under the ownership of Tampa Steel Drums. Drums were located along the western edge of the wetland in 1975. In a 1977 aerial photograph, the wetland had been backfilled. Presumably, soil from a new pond on the southeast corner of the Bay Drums Site had been used to backfill the wetland. Drainage from the Peak Oil Site was reportedly diverted by ditch to the Central Wetland. In 1978, the western portion of the previously filled wetland was developed into a washwater holding pond which is known to have received waste from drum reconditioning activities. Drum reconditioning activities ceased in 1982.

For approximately two and one-half years beginning in 1984, the Bay Drums Site was operated as Resource Recovery Association, Inc. During this time, waste roofing shingles were deposited on most of the Site to depths ranging from three to more than nineteen feet. In 1989, the EPA removed approximately 70,000 cubic yards of shingles in order to effectively evaluate the extent of soil contamination at the Site. The pile currently lies, covered and fenced, on Hillsborough County property. EPA conducted another

removal action at the Bay Drums Site in 1990 and removed contaminated soils, drums of hazardous waste, and bags of pesticides from the Site.

REMEDIAL HISTORY OF OPERABLE UNITS 1, 3 AND 4

In the early 1980s, EPA and FDEP conducted inspections at the Peak Oil and Bay Drums Sites. Various chemical constituents were found to be present in Site soils, including heavy metals, petroleum hydrocarbons, trace concentrations of polychlorinated biphenyls (PCBs) and solvent-type chemical compounds.

In 1984, the Peak Oil and Bay Drums Sites were jointly evaluated according to the Hazard Ranking System and proposed for listing on the **National Priority List (NPL)**. On June 10, 1986, the Peak Oil Site, combined with the adjacent Bay Drums Site, was placed on the NPL. EPA initiated a removal action utilizing a mobile incinerator to treat sludge found in Lagoon No. 2 in 1986. In 1989, members of the Peak Oil Generators Group entered into a Consent Order with EPA to conduct a Remedial Investigation/Feasibility Study (RI/FS) at the Peak Oil Site. The RI/FS was completed in 1993.

As mentioned earlier, there are four **Operable Units (OUs)** identified at the Peak Oil/Bay Drums Site:

- OU-1 (Peak Oil Source Control)
- OU-2 (Area-Wide Groundwater)
- OU-3 (Bay Drums Source Control)
- OU-4 (Wetlands)

OU-1 (Peak Oil Source Control): The main contaminants of concern at OU-1 were metals (e.g., lead), Bis (2-ethylhexyl)-phthalate and polychlorinated biphenols (PCBs). To address these contaminants, in June of 1993, a **Record of Decision (ROD)** for OU-1 was issued by

EPA. The Peak Oil Group entered into a Consent Decree in May 1997 to perform work under the OU-1 ROD. Major elements of the OU-1 remedy were completed in 2001. The major components of the OU-1 remedy were as follows:

- Excavation and stabilization/solidification of impacted soils and the ash pile.
- Construction of a slurry wall around the impacted area and keyed into the underlying Hawthorn Formation.
- On-site disposal of the solidified/stabilized soils and ash in a single monolith.
- Installation of a low permeability cap over the treated material.
- Institutional controls to be placed on the property.

In addition to these components of the OU-1 remedy, the ROD also included a soil flushing/bioremediation component for organics. This remedial component was eliminated by EPA. The reasons for the elimination can be found in the **Explanation of Significant Differences (ESD)** from 2000. Other elements addressed by the ESD included the revision of solidification performance standards and a modification of the cap design. The cap design change was from a multi-media cover system to a geosynthetic clay liner (GCL) cover system. Again, the OU-1 source control remedy was substantially completed in 2001.

In addition to the capped and stabilized soil surrounded by the slurry wall, the Peak Oil Site currently has one warehouse-type building standing in its northwestern corner.

OU-3 (Bay Drums Source Control): The main contaminants of concern at OU-3 were lead and chlordane. To address these contaminants, on March 31, 1993, the Record of Decision for OU-3 was issued by EPA.

The Bay Drums Group entered into a Consent Decree with EPA in February 1998 to perform work under the OU-3 ROD. The major components of the OU-3 remedy were as follows:

- Excavation and stabilization/solidification of impacted soils.
- On-site disposal of the solidified/stabilized soils in a single monolith.
- Installation of a low permeability cap over the treated material.
- Disposal of the on-site shingle pile (i.e., the shingles left on the Bay Drums property after the 1989 EPA Shingle Removal - completed in 1997).
- Placement of one foot of topsoil over the remainder of the uncapped Site.
- Placement of Institutional Controls on the property.

Major elements of the OU-3 remedy were completed in 2001. The Bay Drums Site is currently an open field. There are no buildings present on the Bay Drums Site.

OU-4 (Wetlands): Three wetlands adjacent to the Site were located southwest, southeast and northwest. The main contaminants of concern at OU-4 are the contaminants transported by stormwater runoff to the wetlands (e.g., lead, chlordane, etc.). To address these contaminants, on June 28, 1994, the Record of Decision (ROD) for OU-4 was issued by EPA. The selected remedy for OU-4 does not involve active remediation measures, but does require periodic ecological assessments at specified time intervals. The expectation was that implementation of remedies for OU-1, OU-2 and OU-3 will either eliminate or significantly reduce the migration of contaminants into the wetland areas.

SUMMARY OF OU-2 (AREA-WIDE GROUNDWATER) CONTAMINATION

OU-2 (Area-Wide Groundwater): The main contaminants of concern for OU-2, the subject of this Proposed Plan Fact Sheet, are chlorinated solvents (e.g., dichloroethane, dichloroethylene, ethylbenzene, tetrachloroethylene, vinyl chloride), semi-volatile organics (e.g., naphthalene), metals (e.g., lead) and acetone, benzene, toluene, ethylbenzene, xylenes. These contaminants are found in both the Surficial Aquifer (i.e., from approximately 9 feet below land surface (bls) to approximately 37 feet bls) and the Floridan Aquifer (i.e., beginning at a depth bls of from approximately 30 to 80 feet).

SUMMARY OF RISKS FOR OU-2 (AREA-WIDE GROUNDWATER)

As part of the RI/FS, a baseline risk assessment was conducted to determine the current and future effects of contaminants on human health and the environment.

Current Risks for OU-2: The area-wide risk groundwater assessment did not address current exposure because the onsite groundwater was not currently being used as a source of drinking water. It should also be noted that a well survey was conducted in 1992, and in September of 2002 another targeted well survey was performed to re-verify well locations/uses near the Site (de maximis 2004). The 2002 survey focused on the area immediately surrounding the Site (i.e., a radius of approximately 1,500 feet). Because the direction of groundwater flow is determined to be to the north/northwest, an even larger area to the north, northwest and west of the Site was also surveyed. A total of 22 water supply wells were identified. None of the identified wells is used for drinking water purposes. Approximately 800 feet

separates the nearest water supply well from the plume, and this well is to the northeast of the Site. Again, the groundwater flow direction is determined to be north/northwest of the Site; therefore, the well closest to the Site is not in the path of the plume's migration. More importantly, the closest known water supply well to the north/northwest of the Site is approximately 2.5 miles beyond the plume's leading edge.

Future Risks: The risks associated with the possible future exposures for workers or residents exceeds the risk range used by EPA for both the Surficial Aquifer and the Floridan Aquifer. The Floridan Aquifer is the current source of municipal water supplies in the area. For this reason, actual or threatened releases of hazardous substances from the groundwater, if not addressed, will continue to contaminate the groundwater and may present an imminent and substantial endangerment to the public health, welfare or the environment. As noted earlier, none of the 22 water supply wells identified near the Site are used for drinking water purposes.

Surficial and Floridan Aquifers: Although no one is currently drinking from areas of contaminated groundwater, the State has designated the area at the Site and surrounding the Site as a Delineation Zone (Chapter 62-524, F.A.C.). Chapter 62-524 sets forth restrictions on the construction of potable water wells and the use of groundwater in delineated zones.

SUMMARY OF 1993 REMEDY FOR OU-2

To address the contaminants in both aquifers, EPA issued a Proposed Plan in the early 1990s for remedial action at the site. After receiving public comment on the proposed remedy, EPA signed a Record of Decision (ROD) for OU-2 on August 9, 1993. The 1993 OU-2 ROD

provided for the following:

- Groundwater extraction via extraction wells.
- Implementation of the Peak Oil source control remedy outlined in the Peak Oil/Bay Drums Record of Decision - OU-1.
- Air stripping for removal of volatile organic compounds (VOCs).
- Carbon polishing for removal of semi-volatiles and other organic materials.
- Discharge to a Publicly Owned Treatment Works (POTW). Groundwater will be treated to meet Federal and State drinking water standards and/or pollutant limits set by the local POTW prior to discharge. The treated water will be conveyed via discharge piping to connect to a manhole for ultimate discharge to the POTW. A permit from the POTW will have to be obtained in order to discharge the treated groundwater into its system.
- Groundwater monitoring.

As a contingency, if necessary, chemical precipitation for the treatment of metals and discharge by either spray irrigation, recharge, or surface water as outlined in Alternative 3C of the Feasibility Study was added to the remedy. For instance, if the remedy failed to meet the pretreatment requirement of the local POTW for metals, the chemical precipitation component would be added to the remedy. Also, in the event that a POTW permit could not be obtained, EPA would select an alternative discharge method. If this had occurred, the treatment system would have been required to meet the appropriate discharge standards for the selected method.

SUMMARY OF 1993 OU-2

REMEDY IMPLEMENTATION

SURFICIAL AQUIFER: A Remedial Design (RD) Work Plan for OU-1, OU-2 and OU-3, prepared by Parsons Engineering Science, was submitted to EPA as final in September 1998. Relative to the OU-2 remedy, the work plan identified several additional data requirements that were needed to complete the design of the groundwater treatment system. The RD Work Plan also noted that the remedial design for OU-2 could not be completed until the remedies for OU-1 and OU-3 were completed. In order to complete the OU-2 design, it would be necessary to know the final location of the stabilized soils, sediments, ash pile and other features of the OU-1 and OU-3 remedies. As noted above, the remedies for OU-1 and OU-3 have been substantially completed.

Among the tasks to be completed for collection of additional data requirements pursuant to the OU-2 design, a Surficial Aquifer pump test was planned. The pump test was to provide specific data on the hydrogeologic properties of the Surficial Aquifer and to evaluate potential impacts to the area wetlands. Components and procedures of the pump test were detailed in the Pre-Design Investigation Sampling and Analysis Plan (Parsons, 1998b).

The Surficial Aquifer pump test was conducted in January/February 1999. Results of the pump test were provided in the Pre-design Investigation Report (PDI Report) submitted to EPA on March 19, 1999. Principal conclusions were that flow rates achieved during both pump tests in the Surficial Aquifer were less than one gallon per minute (gpm) and that a groundwater extraction rate of less than 1 gpm would result in an excessive number of extraction wells. Specifically, the extraction well yields are likely to be in the range of 0.3 to 0.5 gpm per

well. Therefore, in order to provide the yield anticipated when this alternative was selected by the 1993 ROD for OU-2, as many as 100 extraction points would have to be installed. In addition, groundwater sampling in the Surficial Aquifer shows the presence of reductive dechlorination for trichloroethene (TCE) and trichloroethane (TCA). A pattern of daughter product predominance has been observed at many of the monitoring points indicating biologically driven reductive degradation of chlorinated compounds (i.e., chlorinated compounds are being naturally degraded). Furthermore, the fuel hydrocarbons present at the Site (i.e., benzene, toluene, ethylbenzene and xylenes) may be acting as an organic substrate to stimulate dechlorination.

During the additional field work in the late 1990s, it was discovered that contamination in the Surficial Aquifer extended further than noted in the investigations of the early 1990s. For example, groundwater contamination in the Surficial Aquifer is onsite. However, a previously unknown narrow portion of the plume was also found to extend across Faulkenburg Road and onto the western side/border of the Industrial Galvanizing Plant (see Figure 2).

FLORIDAN AQUIFER: The contaminants in the Floridan Aquifer are mostly centered around two old onsite production wells (F-2 and F-3).

The 1993 Remedial Investigation noted that the chemical concentrations detected in the two production wells (i.e., F-2 and F-3) were similar to concentrations found in the Surficial Aquifer and much higher than concentrations detected in other adjacent Floridan Aquifer wells. The Remedial Investigation concluded that the chemical distribution in the Floridan Aquifer is characteristic of point source contamination (i.e., borehole leakage from old

Production Wells F-2 and F-3).

Sampling of the Floridan Aquifer wells shows the decommissioning of F-2 and F-3 in 1994 has virtually eliminated the source of contaminant migration into the Floridan Aquifer. Furthermore, pH measurements collected in 2001 indicate that the pH levels in the Floridan, previously near 4 in 1995, have returned to the anticipated pH range for the Floridan Aquifer (i.e., 6.5 to 7.5). Floridan Aquifer monitoring conducted since the OU-2 ROD indicates an overall decrease in organic compound concentrations, calling into question the wisdom of pursuing a pump and treat system for the Floridan Aquifer as envisioned by the 1993 ROD for OU-2.

SUMMARY OF REMEDIAL ALTERNATIVES FOR OU-2

Based on information gained during the late 1990s and early 2000s, the viability and need for implementing the remedy selected in the 1993 ROD for OU-2 was in need of re-examination. In order to evaluate possible cleanup alternatives for OU-2, a Focused Feasibility Study (FFS) was initiated in 2003. The FFS evaluated the following possible remedial alternatives (see Tables 1 and 2). The alternatives in *italics* were retained for further evaluation against the nine evaluation criteria outlined Table 3.

TABLE 1. SURFICIAL AQUIFER REMEDIAL ALTERNATIVES

1. <i>No Action</i>
2. <i>Monitored Natural Attenuation (MNA)</i>
3. <i>Enhanced In-Situ Bioremediation and MNA</i>
4. <i>Enhanced In-Situ Bioremediation with Source Treatment and MNA</i>
5. <i>Groundwater Extraction and Treatment (i.e., the alternative originally selected in the 1993 ROD)</i>

6. Iron Permeable Reactive Barrier

7. *In-Situ Chemical Oxidation*

TABLE 2. FLORIDAN AQUIFER REMEDIAL ALTERNATIVES

1. *No Action*

2. *Monitored Natural Attenuation*

3. *Groundwater Extraction and Treatment (i.e., the alternative originally selected in the 1993 ROD)*

TABLE 3: CRITERIA FOR EVALUATING REMEDIAL ALTERNATIVES

In selecting a preferred cleanup alternative, EPA uses the following criteria to evaluate each alternative developed in the Focused Feasibility Study (FS).

Threshold Criteria - The first two criteria are essential and if not met, an alternative is not considered further.

1. Overall Protection of Human Health and the Environment -- Degree to which alternative eliminates, reduces, or controls health and environmental threats.
2. Compliance with **Applicable or Relevant and Appropriate Requirements (ARARs)** -- Assesses compliance with Federal/State requirements.

Balancing Criteria - The next five criteria are balancing criteria used to further evaluate all options that meet the first two criteria.

3. Long-Term Effectiveness -- How remedy maintains protection once cleanup goals have been met.
4. Reduction of Toxicity, Mobility, or Volume Through Treatment -- Expected performance of the treatment technologies to lessen harmful nature, movement, or amount of contaminants.
5. Implementability -- Technical feasibility and administrative ease of a remedy.
6. Short-Term Effectiveness -- Length of time for remedy to achieve protection and impact of implementing the remedy.
7. Cost -- Weighing of benefits of a remedy against the cost of implementation.

Modifying Criteria - The final two criteria are used to modify EPA's proposed plan after the public comment period has ended and comments from the community and the State have been received.

8. State Acceptance -- Consideration of State's opinion of EPA's proposed plan. EPA seeks state concurrence.
9. Community Acceptance -- Consideration of public comments on proposed plan.

DESCRIPTION OF REMEDIAL ALTERNATIVES FOR OU-2

Before describing the remedial alternatives under consideration for OU-2, please note that only the remedy selected in the 1993 ROD is under revision. No other aspects of the 1993 ROD are changed by this amendment. For example, all of the 1993 ROD's remedial action objectives, cleanup standards, application (or no application) of secondary drinking water standards, etc. remain in force and are unaffected by this amendment.

The remedial alternatives for OU-2 are presented and described as follows:

Surficial Aquifer: Since the signing of the 1993 ROD for OU-2, understanding of the hydrogeology and contaminant history has significantly improved. Based on this new information, EPA is considering the following alternatives for the Surficial Aquifer:

Surficial Aquifer Alternative 1: No Action

The no action alternative is included in the evaluation as a baseline comparison with the other remedies. This alternative involves no active remediation. However, 5-year reviews would be implemented to ensure that contaminants have not migrated beyond the compliance boundary in concentrations exceeding their cleanup levels. As such, in conjunction with each 5-year review, a round

of groundwater sampling would be needed and costs would be incurred.

Surficial Aquifer Alternative 2: Monitored Natural Attenuation

Like the no action alternative, Monitored Natural Attenuation (MNA) for the Surficial Aquifer involves no active remediation. Instead, this alternative would rely on existing natural degradation processes to degrade the plume. The natural processes that may play a role include: abiotic degradation, biodegradation, advection, dispersion, diffusion, sorption, oxidation-reduction, partitioning, volatilization and precipitation. Natural attenuation processes are expected to continue to degrade VOCs and semi-VOCs present and to further immobilize inorganic metals as the aquifer pH returns to the normal range (greater than 5).

Ongoing acceptance of MNA as a remedy is predicated on some key factors (e.g., there being no receptors to the contamination, the contaminant source has been addressed and the plume is not migrating, etc.). As such, MNA would include collecting groundwater samples from locations on, or adjacent to, the Site property. Two types of monitoring well locations would be established: monitoring wells in the plume and in the zone of natural attenuation to determine if the behavior of the plume is changing, and performance evaluation wells to confirm that contaminant concentrations are decreasing to meet regulatory cleanup levels. Groundwater monitoring would be implemented for a 30-year period. At the conclusion of each 5-year review, groundwater quality would be evaluated and the monitoring program would be revisited.

This alternative would also include maintenance of Institutional Controls (i.e., prohibition on installation of drinking water

wells on the Peak Oil/Bay Drums Site; continuation of the Delineation Zone designation pursuant to Chapter 62-524 F.A.C. which prohibits/restricts new potable water wells) until cleanup is reached.

Surficial Aquifer Alternative 3: Enhanced In-Situ Bioremediation and MNA

Enhanced In-Situ Bioremediation is an enhancement of the naturally occurring biodegradation of organic contaminants. With enhanced in-situ bioremediation, an organic substrate (such as vegetable oil) would be injected into the subsurface:

- in areas of high contamination, and
- to provide a “reactive barrier” of organic substrate in line with the groundwater flow from a contaminated area.

The organic substrate would provide a source of organic carbon to induce reducing conditions and to stimulate growth of indigenous microorganisms thereby enhancing rates of anaerobic reductive dechlorination of the groundwater contaminants. Effective injection of the organic substrate would be accomplished with an oil emulsion using direct-push technology. The emulsion would allow for easier distribution of the organic substrate within the subsurface. The separate phase nature of the organic substrate would allow for slow dissolution into groundwater, thus making it a slow release carbon source.

Additionally, chlorinated compounds in the groundwater should partition in the organic substrate, which acts as a “sponge” to quickly remove these compounds from the groundwater until steady-state conditions are reached. The compounds are then slowly released as the organic substrate degrades into an active bioremediation zone.

Natural attenuation processes are expected to further immobilize inorganic metals as the aquifer pH returns to the normal range (greater than 5).

Implementation of Enhanced In-Situ Bioremediation would require the following:

- Installation of an acceptable number of new monitoring wells to monitor groundwater downgradient of the oil emulsion, or organic substrate, injection areas.
- Performance of baseline groundwater sampling for parameters needed to track the success or failure of natural attenuation.
- Injection of organic substrate through the depth of the Surficial Aquifer using a slotted injection tool and direct push technology.
- Monitoring of chemical and natural attenuation parameters to document organic substrate distribution, reduction of contaminant concentration and mass, and annual monitoring for the same chemicals and parameters to evaluate progress toward achieving the cleanup levels. Monitoring will occur quarterly for the first 6 months after injection and every 6 months after that during the first 2 year period. After 2 years, the frequency of monitoring will be evaluated and modified as needed.
- Additional injection of organic substrate, if determined to be needed.

This alternative would also include maintenance of Institutional Controls (i.e., prohibition on installation of drinking water wells on the Peak Oil/Bay Drums Site; continuation of the Delineation Zone designation pursuant to Chapter 62-524 F.A.C. which prohibits/restricts new potable water wells) until cleanup is reached.

In addition, it is envisioned that an ongoing evaluation of monitoring wells will be pursued to determine the effect of turbidity on observed metal concentrations.

It is envisioned that at some future point in time, the actions to supplement natural attenuation will no longer be needed and this alternative will become a stand alone MNA remedy.

Surficial Aquifer Alternative 4: Enhanced In-Situ Bioremediation with Source Area Treatment and MNA

This alternative consists of three interrelated components: Enhanced In-Situ Bioremediation, Air Sparging and MNA.

- The Enhanced In-Situ Bioremediation component is equivalent to that explained in Surficial Aquifer Alternative 3, including maintenance of Institutional Controls.
- The Source Area Treatment portion of this alternative is to be utilized within the plume area at and around monitoring well (MW) B-7, an area containing high benzene, toluene, ethylbenzene and xylene (and chlorinated) compounds in groundwater. Air Sparging involves injecting a gas (usually air/oxygen) under pressure into the saturated zone to volatilize groundwater contaminants and to possibly promote biodegradation in saturated and unsaturated soils by increasing subsurface oxygen concentrations. An evaluation of the source area treatment will be made to determine if state and federal air emission standards are exceeded. If applicable standards are found to be exceeded, then corrective action will be taken.
- The MNA component is equivalent to that explained in Surficial Aquifer Alternative 2. Both Enhanced In-Situ Bioremediation and Source Area Treatment are actions taken to supplement natural attenuation; hence, the

inclusion of MNA in the title of this alternative. It is envisioned that at some future point in time, the actions to supplement natural attenuation will no longer be needed and this alternative will become a stand alone MNA remedy.

Alternative 5: Groundwater Extraction and Treatment (original 1993 ROD Remedy for OU-2)

Alternative 5 is the remedy originally selected by the 1993 ROD for OU-2. If implemented, this alternative would include the following:

- Groundwater extraction via extraction wells.
- Implementation of the Peak Oil source control remedy outlined in the Peak Oil/Bay Drums Record of Decision - OU-1.
- Air stripping for removal of VOCs;.
- Carbon polishing for removal of semi-volatiles and other organic materials.
- Discharge to a POTW.
- Metals precipitation, if needed.
- Groundwater monitoring.

This alternative would also include maintenance of Institutional Controls (i.e., prohibition on installation of drinking water wells on the Peak Oil/Bay Drums Site; continuation of the Delineation Zone designation pursuant to Chapter 62-524 F.A.C. which prohibits/restricts new potable water wells) until cleanup is reached.

Floridan Aquifer: Since signing of the 1993 ROD for OU-2, monitoring indicates that the closing of the two old Floridan Aquifer production wells has contributed greatly in addressing contamination in the Floridan Aquifer. Based on this new information, EPA is looking at the following alternatives for the Floridan Aquifer:

Floridan Aquifer Alternative 1: No Action

The no action alternative is retained for evaluation as a baseline comparison with the other remedies. This alternative involves no active remediation. However, 5-year reviews would be implemented to ensure that contaminants have not migrated beyond the compliance boundary in concentrations exceeding their cleanup levels. As such, in conjunction with each 5-year review, a round of groundwater sampling would be needed and costs would be incurred.

Floridan Aquifer Alternative 2: Monitored Natural Attenuation

Like the no action alternative, MNA for the Floridan Aquifer involves no active remediation. Instead, this remedy would rely on existing natural degradation processes to degrade the plume.

The natural processes that may play a role include: abiotic degradation, biodegradation, advection, dispersion, diffusion, sorption, oxidation-reduction, partitioning, volatilization and precipitation.

Ongoing acceptance of MNA as a remedy is predicated on some key factors (e.g., there being no receptors to the contamination, the contaminant source has been addressed and the plume is not migrating, etc.). Monitored natural attenuation would include collecting groundwater samples from locations on and adjacent to the Site property. Sampling would be performed to evaluate the contaminant concentrations to confirm that contaminant concentrations are decreasing to meet regulatory cleanup levels. Groundwater monitoring would occur annually, at a minimum, and would be implemented for at least a 30 year period.

At the conclusion of each 5-year review, groundwater quality would be evaluated and

the monitoring program would be revisited. If groundwater contaminant concentration trends are not declining at a satisfactory rate, then utilization of Enhanced In-Situ Bioremediation is identified as a contingency.

This alternative would also include maintenance of Institutional Controls (i.e., prohibition on installation of drinking water wells on the Peak Oil/Bay Drums Site; continuation of the Delineation Zone designation pursuant to Chapter 62-524 F.A.C. which prohibits/restricts new potable water wells) until cleanup is reached.

Floridan Aquifer Alternative 3: Groundwater Extraction and Treatment (original 1993 ROD Remedy for OU-2)

Alternative 3 is the remedy originally selected by the 1993 ROD for OU-2. If implemented, this alternative would include the following:

- Groundwater extraction via extraction wells.
- Implementation of the Peak Oil source control remedy outlined in the Peak Oil/Bay Drums Record of Decision - OU-1.
- Air stripping for removal of VOCs;
- Carbon polishing for removal of semi-volatiles and other organic materials.
- Discharge to a POTW.
- Metals precipitation, if needed.
- Groundwater monitoring.

This alternative would also include maintenance of Institutional Controls (i.e., prohibition on installation of drinking water wells on the Peak Oil/Bay Drums Site; continuation of the Delineation Zone designation pursuant to Chapter 62-524 F.A.C. which prohibits/restricts new potable water wells) until cleanup is reached.

EVALUATION OF ALTERNATIVES

To determine which alternative best eliminates or reduces risks posed by contaminated groundwater, EPA used the evaluation criteria described in Table 3 to evaluate the five alternatives for the Surficial Aquifer and the three alternatives for the Floridan Aquifer. This section of the Proposed Plan profiles the relative performance of each alternative against the nine criteria.

Tables 4 and 5 profile the performance of the Surficial and Floridan alternatives, respectively, in terms of the nine evaluation criteria noting how it compares to the other alternatives under consideration (State and Community Acceptance were not rated). The numerical ranking attempts to provide a relative relationship, on a scale of 1-5 for the Surficial Aquifer Alternatives and 1-3 for the Floridan Aquifer Alternatives, of each alternative's performance under each criteria. The higher the number, the better the rating of that alternative for the criterion under consideration (i.e., 1 is the least favorable)). Some alternatives are deemed basically equivalent for certain criterion and carry the same rating.

TABLE 4. SURFICIAL AQUIFER COMPARATIVE ANALYSIS OF REMEDIAL ALTERNATIVES					
Criterion	No Action (1)	Monitored Natural Attenuation (2)	Enhanced In- Situ Bioremediation (3)	Enhanced In-Situ Bioremediation with Source Treatment and MNA (4)	Groundwater Extraction and Treatment (5)
1. Overall Protectiveness	1	2	3	5	4
2. Compliance with ARARS	2	2	3	5	4
3. Long-Term Effectiveness and Permanence	2	2	4	5	3
4. Reduction of Toxicity, Mobility, or Volume	2	2	4	5	2
5. Short-Term Effectiveness	2	2	4	5	2
6. Implementability	5	4	3	2	1
7. Present Worth Cost	\$101,980	\$693,026	\$1,180,543	\$1,377,829	\$5,674,820

TABLE 5. FLORIDAN AQUIFER COMPARATIVE ANALYSIS OF REMEDIAL ALTERNATIVES

NCP Criterion	No Action (1)	Monitored Natural Attenuation (2)	Groundwater Extraction and Treatment (3)
1. Overall Protectiveness	1	2	1
2. Compliance with ARARS	2	2	2
3. Long-Term Effectiveness and Permanence	3	3	1
4. Reduction of Toxicity, Mobility, or Volume	2	2	2
5. Short-Term Effectiveness	3	3	1
6. Implementability	3	3	1
7. Cost	\$113,019	\$631,425	\$5,214,204

PREFERRED ALTERNATIVES

Surficial Aquifer: EPA believes that Surficial Aquifer Alternative 4 (enhanced in-situ bioremediation and source area treatment and MNA) is the most practical and efficient alternative and has the best chance of eliminating or significantly reducing risks at the site. Implementation of this alternative would include the following:

- Installation of an acceptable number of new monitoring wells to monitor downgradient of the organic substrate injection areas.
- Performance of baseline groundwater sampling for parameters needed to track the success or failure of natural attenuation.
- Injection of organic substrate through the depth of the Surficial Aquifer using a slotted injection tool and direct push technology.
- Monitoring of chemical and natural attenuation parameters to document organic substrate distribution, reduction of

contaminant concentration and mass, and annual monitoring for the same chemicals and parameters to evaluate progress toward achieving the cleanup levels.

Monitoring will occur quarterly for the first 6 months after injection and every 6 months after that during the first 2-year period. After 2 years, the frequency of monitoring will be evaluated and modified as needed.

- Additional injection of organic substrate, if determined to be needed.
- Installation of Air Sparging System in the area of monitoring well B-7.
- Monitoring of the effectiveness of the Air Sparging System through time.
- Monitoring of metal concentrations to evaluate/document reductions over time.
- Ongoing evaluation of monitoring wells to determine the effect of turbidity on observed metals.
- Maintenance of Institutional Controls (i.e., prohibition on installation of drinking water wells on the Peak Oil/Bay Drums Site, continuation of the Delineation Zone designation pursuant to Chapter 62-524 F.A.C).

Floridan Aquifer: EPA believes that Floridan Aquifer Alternative 2 (MNA) is the most practical alternative and will lead to the elimination or significant reduction of risks at the Site. Implementation of this alternative would require the following:

- Long-term monitoring of select Floridan Aquifer monitoring wells for chemical parameters to routinely evaluate whether attenuation processes are eliminating contaminant to levels below the OU-2 groundwater cleanup levels. Groundwater monitoring would occur annually, at a minimum, and would be implemented for at least a 30-year period.
- Maintenance of Institutional Controls (i.e., prohibition on installation of drinking water wells on the Peak Oil/Bay Drums Site, continuation of the Delineation Zone designation pursuant to Chapter 62-524 F.A.C).

COMMUNITY PARTICIPATION

EPA has developed a community relations program as mandated by Congress under Superfund to respond to citizen's concerns and needs for information and to enable residents and public officials to participate in the decision-making process. Public involvement activities undertaken at Superfund sites consist of interviews with local residents and elected officials, a community relations plan for each site, fact sheets, availability sessions, public meetings, public comment periods, newspaper advertisements, site visits, and any other actions needed to keep the community informed and involved.

EPA is conducting a **30-day public comment period from September 22, 2004, - October 22, 2004**, to provide an opportunity for public involvement in selecting the final cleanup method for Operable Unit 2 (groundwater). Public input on all alternatives, and on the information that supports the alternatives is an important contribution to the remedy selection process. If anyone wishes EPA to hold a public meeting to present the latest understanding of Site contamination, describe the preferred alternative listed in the Proposed Plan or answer any questions, then please contact Wesley Hardegree of EPA at (800) 435-9234 by **October 6, 2004**. Because this Proposed Plan Fact Sheet provides only a summary description of the cleanup alternatives being considered, the public is encouraged to consult the Information Repository for a more detailed explanation.

During this 30-day comment period, the public is invited to review all site-related documents housed at the Information Repository located at Brandon Regional Library, 619 Vonderburg Drive, Brandon, Florida, and to offer comments to EPA either orally at the public meeting or in written form during this time period. The actual remedial action could be different from the preferred alternative, depending upon new information or statements EPA may receive as a result of public comments. If you prefer to submit written comments, please mail them postmarked no later than midnight **October 22, 2004** to:

L'Tonya Spencer
Community Involvement Coordinator
U.S.EPA, Region 4
61 Forsyth Street, SW
Atlanta, GA 30303-3014

All comments will be reviewed and a response prepared in making the final determination of the most appropriate alternative for cleanup/treatment of the Site. EPA's final choice of a remedy will be issued in a **Record of Decision (ROD)**. A document called a **Responsiveness Summary** summarizing EPA's response to all public comments will also be issued with the ROD. Once the ROD is signed by the Regional Administrator it will become part of the Administrative Record (located at the Library) which contains all documents used by EPA in making a final determination of the best cleanup/treatment for the Site. Once the ROD has been approved, EPA will begin the design of the selected remedy.

INFORMATION REPOSITORY LOCATION

**Brandon Regional Library
619 Vonderburg Drive
Brandon, Florida
813 744-5630**

**FOR MORE INFORMATION ABOUT THE SITE OR
TO REQUEST A PUBLIC MEETING, PLEASE CONTACT:**

**Wesley S. Hardegree, Remedial Project Manager
Superfund Remedial and Technical Services Branch
Waste Division
61 Forsyth Street
Atlanta, Georgia 30303
Toll Free No.: 1 800 435-9234**

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MAILING LIST

If you are not already on our mailing list and would like to be placed on the list to receive future information on the **Peak Oil/Bay Drums Site**, or if you want your name removed from the list, or if you have a change of address, please complete this form and return to L'Tonya Spencer, Community Involvement Coordinator at the above address:

NAME: _____

ADDRESS: _____

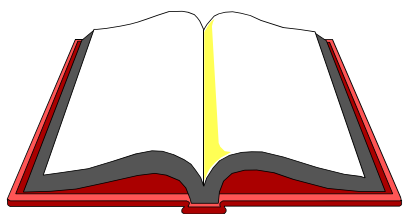
CITY, STATE, ZIP CODE: _____

PHONE NUMBER: _____

Addition ☐

Change of Address ☐

Deletion ☐



GLOSSARY

Administrative Record: Set of documents and data used in selecting cleanup remedies at NPL sites. The record is placed in the **information repository** to allow public access.

ARARs: Applicable or Relevant and Appropriate (federal and state) Requirements a selected remedy must meet.

CERCLA or Superfund: Federal law establishing and authorizing EPA to respond to abandoned or unregulated releases of hazardous waste.

Explanation of Significant Differences (ESD): A document which describe a change in a remedy that does not fundamentally alter the overall cleanup approach.

Groundwater: Water beneath earth's surface filling pores between sand, soil, or gravel.

Information repository: Local files set up for public review of **Superfund** sites documents relevant to EPA activities.

National Priorities List (NPL): EPA's list of hazardous waste sites eligible for attention under federal **Superfund** program.



Place
Stamp

Name _____
Address _____
City _____ State ____ Zip _____

L'Tonya Spencer, Community Relations Coordinator
Waste Management Division
U. S. EPA, Region 4
Atlanta Federal Center
61 Forsyth St, SW
Atlanta, GA 30303-3104

United States
Environmental Protection
Agency

Superfund Remedial and Technical Services Branch

Region 4
61 Forsyth St. SW
Atlanta, Georgia, 30303

Official Business
Penalty for Private Use
\$300

Peak Oil/Bay
Drums
SUPERFUND SITE
FACT SHEET



Peak Oil/Bay Drums Superfund Site

USE THIS SPACE TO WRITE YOUR COMMENTS

Your input on the Amended Proposed Plan for the Peak Oil/Bay Drums Site is important in helping EPA modify the remedy appropriately. You may use the space below to write your comments, then fold and mail. Additional comments may be included with this form.

Name _____

Address _____

Phone # _____